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gsm sres rand a3 a8 registration
"mobile phone" access network challenge GSM "master key"
gsm signalling
gsm roaming
ike "session key" challenge
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ACM

+gsm +authentication a3 a8

IEEE

gsm <and> (a3 <or> a8) <and> authentication

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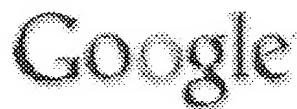
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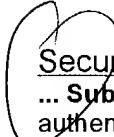
... **Subscriber Identity Module (SIM)**. A **SIM** is the smart card inside a **GSM** phone that identifies the user account to the network, handles authentication and ...
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... **SIM (Subscriber Identity Module)** card is about the size of a postage stamp, with embedded circuitry on one side of its surface, which when inserted into a **GSM** ...
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Secure **GSM** & CDMA Mobile Phones Prevent Bugging

... **Subscriber Identity Module (SIM)** The **SIM** contains the IMSI, the individual subscriber authentication ... The **GSM** handset contains the ciphering algorithm (A5). ...

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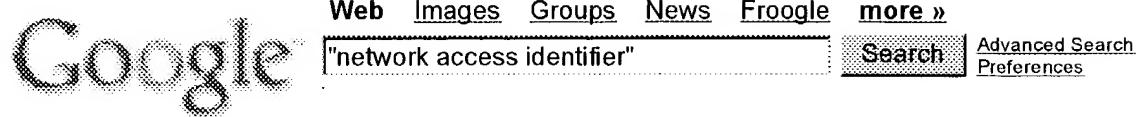
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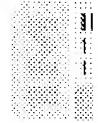
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Relevance scale

1 Enhanced privacy and authentication for the global system for mobile communications

Chii-Hwa Lee, Min-Shiang Hwang, Wei-Pang Yang

July 1999 **Wireless Networks**, Volume 5 Issue 4

Full text available: [pdf\(204.97 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

The Global System for Mobile Communications (GSM) is widely recognized as the modern digital mobile network architecture. Increasing market demands point toward the relevancy of security-related issues in communications. The security requirements of mobile communications for the mobile users include: (1) the authentication of the mobile user and Visitor Location Register/Home Location Register; (2) the data confidentiality between mobile station and Visitor Location Register, and the data c ...

2 Cryptographic security Techniques for wireless networks

Danai Patiyoot, S. J. Shepherd

April 1999 **ACM SIGOPS Operating Systems Review**, Volume 33 Issue 2

Full text available: [pdf\(1.12 MB\)](#) Additional Information: [full citation](#), [abstract](#), [index terms](#)

This paper deals with security techniques for wireless Networks. The work presented is based on a review of literature regarding current and future wireless security networks systems. The aspects discussed in this paper included the choices of cryptographic algorithms such as protocols for key management and authentication. Various conclusions are drawn from existing security networks and proposed in new wireless ATM network security. Also a proposal for future research into security techniques ...

Keywords: cryptographic, security, wireless

3 Security planning for personal communications

Dan Brown

December 1993 **Proceedings of the 1st ACM conference on Computer and communications security**

Full text available: [pdf\(396.21 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

4 Untraceability in mobile networks

Didier Samfat, Refik Molva, N. Asokan

December 1995 **Proceedings of the 1st annual international conference on Mobile computing and networking**

Full text available:  pdf(1.20 MB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

Keywords: CDPD, GSM, alias, anonymity, authentication, location privacy, mobility, security

5 Ticket based service access for the mobile user



Bhrat Patel, Jon Crowcroft

September 1997 **Proceedings of the 3rd annual ACM/IEEE international conference on Mobile computing and networking**

Full text available:  pdf(1.52 MB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

6 Pen computing: a technology overview and a vision



André Meyer

July 1995 **ACM SIGCHI Bulletin**, Volume 27 Issue 3

Full text available:  pdf(5.14 MB) Additional Information: [full citation](#), [abstract](#), [citations](#), [index terms](#)

This work gives an overview of a new technology that is attracting growing interest in public as well as in the computer industry itself. The visible difference from other technologies is in the use of a pen or pencil as the primary means of interaction between a user and a machine, picking up the familiar pen and paper interface metaphor. From this follows a set of consequences that will be analyzed and put into context with other emerging technologies and visions. Starting with a short historic ...

7 Efficient and flexible location management techniques for wireless communication systems



Jan Jannink, Derek Lam, Jennifer Widom, Donald C. Cox, Narayanan Shrivakumar

November 1996 **Proceedings of the 2nd annual international conference on Mobile computing and networking**

Full text available:  pdf(1.27 MB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

8 A rate-based overload control method for the radio channel in PCN



Nikos I. Passas, Lazaros F. Merakos

September 1997 **Wireless Networks**, Volume 3 Issue 4

Full text available:  pdf(340.69 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Third-generation wireless digital communication systems, currently being developed, are intended to integrate all the existing wireless systems and cover a wide range of services, including voice, video and multimedia. A difficult problem towards this direction is the efficient use of the limited available bandwidth. Although considerable improvements have been made recently in transmitter and receiver technology, the capacity of the air interface is still considerably smaller compared to o ...

9 Authentication protocols for personal communication systems



Hung-Yu Lin, Lein Harn

October 1995 **ACM SIGCOMM Computer Communication Review , Proceedings of the conference on Applications, technologies, architectures, and protocols**

for computer communication, Volume 25 Issue 4Full text available:  pdf(647.17 KB)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Masquerading and eavesdropping are major threats to the security of wireless communications. To provide proper protection for the communication of the wireless link, contents of the communication should be enciphered and mutual authentication should be conducted between the subscriber and the serving network. Several protocols have been proposed by standards bodies and independent researchers in recent years to counteract these threats. However, the strength of these protocols is usually weaken ...

10 Tutorial paper: GSM network signaling 

Yi-Bing Lin

July 1997 **ACM SIGMOBILE Mobile Computing and Communications Review**, Volume 1 Issue 2Full text available:  pdf(678.57 KB) Additional Information: [full citation](#), [abstract](#), [references](#)

GSM is a wireless digital signaling network standard designed by standardization committees from the major European telecommunications operators and manufacturers. This article introduces the software platform for GSM network signaling protocol called Mobile Application Part (MAP). We describe the MAP services, the MAP protocol machine, the MAP dialog model, and then illustrate the MAP specific service primitives by an example.

11 The KryptoKnight family of light-weight protocols for authentication and key distribution Ray Bird, Inder Gopal, Amir Herzberg, Phil Janson, Shay Kutten, Refik Molva, Moti Yung
February 1995 **IEEE/ACM Transactions on Networking (TON)**, Volume 3 Issue 1Full text available:  pdf(1.64 MB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#), [review](#)**12 Security on the move: indirect authentication using Kerberos** 

Armando Fox, Steven D. Gribble

November 1996 **Proceedings of the 2nd annual international conference on Mobile computing and networking**Full text available:  pdf(1.34 MB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)**13 PCS mobility management using the reverse virtual call setup algorithm** 

Chih-Lin I, Gregory P. Pollini, Richard D. Gitlin

February 1997 **IEEE/ACM Transactions on Networking (TON)**, Volume 5 Issue 1Full text available:  pdf(280.50 KB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

Keywords: PCS, mobility management, personal communications, reverse virtual call setup

14 Interworking between Digital European Cordless Telecommunications and a distributed packet switch 

Sudarshan Rao, David J. Goodman, Gregory P. Pollini, Kathleen S. Meier-Hellstern

February 1995 **Wireless Networks**, Volume 1 Issue 1Full text available:  pdf(1.01 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

The Digital European Cordless Telecommunications (DECT) standard specifies an air

interface. DECT requires an external infrastructure to transfer information between wireless terminals, and to transfer information between a wireless terminal and a fixed network. The Public Switched Telephone Network, the GSM Cellular Network, Private Branch Exchanges and mobile data networks are all under investigation as DECT backbone networks. In this paper we look to the future and describe interworking ...

15 Undeniable billing in mobile communication

Jianying Zhou, Kwok-Yan Lam

October 1998 **Proceedings of the 4th annual ACM/IEEE international conference on Mobile computing and networking**

Full text available:  pdf(864.03 KB) Additional Information: [full citation](#), [references](#), [index terms](#)



Keywords: cryptographic protocol, mobile communication security, non-repudiation, undeniable billing

16 Low power scalable encryption for wireless systems

James Goodman, Anantha P. Chandrakasan

January 1998 **Wireless Networks**, Volume 4 Issue 1

Full text available:  pdf(7.39 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)



Secure transmission of multimedia information (e.g., voice, video, data, etc.) is critical in many wireless network applications. Wireless transmission imposes constraints not found in typical wired systems such as low power consumption, tolerance to high bit error rates, and scalability. A variety of low power techniques have been developed to reduce the power of several encryption algorithms. One key idea involves exploiting the variation in computation requirements to dynamically vary th ...

17 Reflection as a mechanism for software integrity verification

Diomidis Spinellis

February 2000 **ACM Transactions on Information and System Security (TISSEC)**, Volume 3 Issue 1

Full text available:  pdf(85.99 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#), [review](#)



The integrity verification of a device's controlling software is an important aspect of many emerging information appliances. We propose the use of reflection, whereby the software is able to examine its own operation, in conjunction with cryptographic hashes as a basis for developing a suitable software verification protocol. For more demanding applications meta-reflective techniques can be used to thwart attacks based on device emulation strategies. We demonstrate how our approach can be ...

Keywords: cryptographic hash function, embedded device, message digest

18 Traffic impacts of international roaming on mobile and personal communications with distributed data management

Jyhi-Kong Wey, Wei-Pang Yang, Lir-Fang Sun

December 1997 **Mobile Networks and Applications**, Volume 2 Issue 4

Full text available:  pdf(728.69 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)



In this paper, we propose four network interconnection scenarios and the related signaling aspects for the international roaming traffic in mobile and personal communications. With or without international gateway relay nodes summarized from the proposed scenarios, we also

derive three international roaming network sets {IR1, IR2, IR3} for the observed signaling traffic model with two-level databases. Based on the proposed perfo ...



19 Standardizing information technology security

Warwick Ford

June 1994 **StandardView**, Volume 2 Issue 2



Full text available: [pdf\(1.12 MB\)](#) Additional Information: [full citation](#), [references](#), [index terms](#)

20 Database and location management schemes for mobile communications

Anna Hać, Bo Liu

December 1998 **IEEE/ACM Transactions on Networking (TON)**, Volume 6 Issue 6



Full text available: [pdf\(264.51 KB\)](#) Additional Information: [full citation](#), [references](#), [index terms](#)

Keywords: GSM, broadcast, cost, mobility management, partition, routing, switching

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-		9	((("mobile node" same authenticat\$3) and (mobile near identity)) and session) and (secret key)) and respon\$5	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/02 07:30
-	full	2	((("mobile node" same authenticat\$3) and (mobile near identity)) and session) and (secret key)) and respon\$5) and @ad<20000331	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/02 07:30
-		4726	mobile same authenticat\$3	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/02 07:32
-		1582	(mobile same authenticat\$3) and @ad<20000331	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/02 07:32
-	wil + abs	46	((mobile same authenticat\$3) and @ad<20000331) and (mobile adj identity)	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/02 07:32
-		6	((mobile same authenticat\$3) and @ad<20000331) and (mobile adj identity)) and (session) and (secret key)	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/02 07:33
-		6	((((mobile same authenticat\$3) and @ad<20000331) and (mobile adj identity)) and (session) and (secret key)) and respon\$3	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/02 07:34
-	full	6	((((mobile same authenticat\$3) and @ad<20000331) and (mobile adj identity)) and (session) and (secret key)) and respon\$3) and (rand\$2 nonce replay)	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/02 08:15
-		24	gsm same a3 same a8 same rand	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/02 08:16
-		21	gsm same a3 same a8 same rand same sres	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/02 08:16
-		1	("20020012433").PN.	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/02 11:06
-		1	("20020012433").PN.) and "protection code"	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/02 14:48
-		777	((network adj access adj identifier) NAI) and (mobile gsm)	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/02 13:05
-		40	((network adj access adj identifier) NAI) same identity) and (mobile gsm)	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/02 13:06
-	full	8	((network adj access adj identifier) NAI) same (subscriber adj identity)) and (mobile gsm)	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/02 13:16
-		0	((((network adj access adj identifier) NAI) same (subscriber adj identity)) and (mobile gsm)) and @ad<20000331	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/02 13:13
-	pure + abs	3	((((network adj access adj identifier) NAI) same identity) and (mobile gsm)) and @ad<20000331	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/02 13:13
-		7	((((network adj access adj identifier) NAI) same (subscriber adj identity)) and (mobile gsm)) and (network adj access adj identifier)	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/02 13:16

-	1	(("20020012433").PN.) and link	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/03 08:44
-	1	(("20020012433").PN.) and (telecommunications adj network) and (packet adj2 network)	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/02 15:33
-	244	@ad<20000331 and gsm and authenticat\$3 and roam\$3 and gateway	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/03 07:45
-	6	<i>full</i> @ad<20000331 and gsm and authenticat\$3 and roam\$3 and gateway and (authentication adj server)	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/03 07:59
-	5	"1075123"	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/03 07:59
-	1	(("20020012433").PN.) and (rand same triplet)	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/03 14:49
-	6	<i>full</i> rand? same triplets	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/03 08:46
-	9	<i>full</i> @ad<20000331 and "network access identifier"	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/03 14:15
-	23	<i>full</i> @ad<20000331 and (gsm with authentication) same gateway	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/03 13:01
-	462	@ad<20000331 and (msc same authenticat\$3)	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/03 14:15
-	34	<i>full</i> X @ad<20000331 and (msc same rand?? same hlr same authenticat\$3)	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/03 14:36
-	0	@ad<20000331 and (gsm same "authentication gateway")	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/03 14:37
-	0	@ad<20000331 and (gsm and "authentication gateway")	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/03 14:37
-	7	<i>full</i> @ad<20000331 and ("authentication gateway")	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/03 14:37
-	3	"0002406"	USPAT; US-PGPUB; EPO; JPO; IBM_TDB	2004/08/04 07:34

L Number	Hits	Search Text	DB	Time stamp
-	full 25	authenticat\$4 adj triplets	USPAT; US-PGPUB; EPO; JPO; IBM TDB	2004/08/04 08:57
-	5550	authenticat\$3 same ((more same once) multiple)	USPAT; US-PGPUB; EPO; JPO; IBM TDB	2004/08/04 08:58
-	2323	authenticat\$3 with ((more same once) multiple)	USPAT; US-PGPUB; EPO; JPO; IBM TDB	2004/08/04 08:58
-	302	authenticat\$3 with ((more same once))	USPAT; US-PGPUB; EPO; JPO; IBM TDB	2004/08/04 08:59
-	93	authenticat\$3 with ((twice))	USPAT; US-PGPUB; EPO; JPO; IBM TDB	2004/08/04 08:59
-	1	authenticat\$4 same (multiple adj challenges)	USPAT; US-PGPUB; EPO; JPO; IBM TDB	2004/08/04 09:03
-	title scanner 39	authenticat\$4 same (multiple adj keys)	USPAT; US-PGPUB; EPO; JPO; IBM TDB	2004/08/04 09:04
-	18	(authenticat\$4 same (multiple adj keys)) not ginter.in.	USPAT; US-PGPUB; EPO; JPO; IBM TDB	2004/08/04 09:06
-	full 5	(authenticat\$4 same (multiple adj keys)) not ginter.in.) and @ad<20000331	USPAT; US-PGPUB; EPO; JPO; IBM TDB	2004/08/04 09:10
-	abs 6	"challenge vector"	USPAT; US-PGPUB; EPO; JPO; IBM TDB	2004/08/04 09:10
-	KWIC 1	"challenge vector" same authenticat\$3	USPAT; US-PGPUB; EPO; JPO; IBM TDB	2004/08/04 09:11
-	abs 16	"multiple secrets"	USPAT; US-PGPUB; EPO; JPO; IBM TDB	2004/08/04 09:42